

# Upcoming TSCA Chemical Data Reporting



October 2015

**AECOM**

# What is Toxic Substances Control Act (TSCA) Chemical Data Reporting (CDR)?

- **Chemical Plants, Petroleum Refineries, and many other types of facilities must report**
- **The most recent CDR submittals were required in 2012 – 4 years between submittals!**
- **These reports provide the EPA (and the public) with data regarding:**
  - **The amount of chemicals being produced in or imported into the United States**
  - **Uses of the chemicals and potential exposures**

# Outline

- **Overview of TSCA**
- **Overview of CDR Requirements**
  - **Reportable Chemical Substances**
  - **Exemptions/Exclusions**
- **Identifying Reportable Chemicals**
  - **Examples for Three Industry Types**



# Outline (continued)

- 2016 reporting
- Importance of Starting the Reporting Process Now
- Conclusions
- Q&A



# Overview of TSCA



# Toxic Substances Control Act

- TSCA gives the EPA the authority to:
  - Require testing of chemicals
  - Regulate the production, use, and disposal of new and existing chemicals
- Purpose of TSCA:
  - To ensure that chemicals used in commerce are safe and do not endanger public health and welfare or the environment

# Toxic Substances Control Act

- **Regulates all organic and inorganic chemical substances and mixtures not covered by other legislation**
- **Does not regulate:**
  - **Food products or additives, drugs, or cosmetics (Federal Food, Drug, and Cosmetic Act)**
  - **Pesticides (Federal Insecticide, Fungicide, and Rodenticide Act)**
  - **Nuclear materials (Atomic Energy Act)**
  - **Tobacco or tobacco products (The Bureau of Alcohol, Tobacco, Firearms, and Explosives)**

# Overview of CDR Requirements





# What is TSCA Chemical Data Reporting?

- EPA collects data per TSCA Section 8(a) using Chemical Data Reporting (CDR)
- The 2016 Reports are to be submitted between **June 1, 2016 and September 30, 2016**
  - *Primary reporting year is 2015*
  - *2012, 2013, & 2014 production data also required*
  - *Regulations found at 40 CFR 711*
    - *40 CFR 711 also refers to other regulations*

# Who Must Submit?

**Manufacturers/Importers of Chemical Substances including:**

- **Chemical manufacturers, petroleum refineries, and other types of facilities**
- **Chemical users and processors who manufacture a byproduct chemical substance with commercial value, such as:**
  - ***Pulp and Paper Mills***
  - ***Coal-fired Utilities***
  - ***Semi-conductor Manufacturers***

# Which Chemicals are Reported?

- Reporting is required for chemical substances that were manufactured or imported:
  - For a “commercial purpose”
  - At a single site in quantities at or above the threshold quantity during 2012, 2013, 2014, or 2015
  - Reporting threshold is 25,000 lbs/year
  - If the chemical substance is on the EPA list of chemicals subject to certain TSCA Special Actions (orders, civil actions, Section 5 or 6 rules), the reporting threshold is 2,500 pounds per year

# Which Chemicals are Reported? (continued)

- Reporting includes substances manufactured as intermediates for use by the manufacturer
  - This is referred to as “site-limited” production
  - Report as “used on-site” on the 2016 form
- Does not include “non-isolated intermediates” (compounds generated and consumed within the process and not isolated or stored)
  - Non-isolated intermediate is defined in 40 CFR 704.3



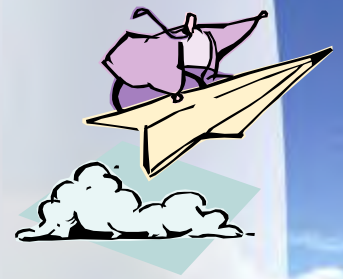
# What Information is Reported?

- Manufacturing/Importing Information
- 2015 Industrial Processing and Use of the Chemical Substance\*
- 2015 Consumer and Commercial Use of the Chemical Substance\*

*\*Note: Most petroleum process streams (listed at 40 CFR 711.6) qualify for a **partial exemption** from reporting; this means that only the manufacturing/importing information is required.*

# Summary of Exemptions/Exclusions

(Refer to the criteria listed in the regulations!)



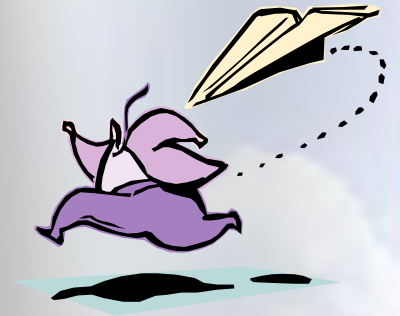
## Exemptions/Exclusions for Categories of Chemical Substances (40 CFR 711.6, 711.10):

- Polymers, water, certain forms of natural gas, microorganisms, naturally occurring substances
  - For naturally occurring substances, the exclusion depends on the specific activities performed
- Substances manufactured as an impurity, non-isolated intermediate, or byproduct without separate commercial intent, or in small quantities for R&D purposes only
- Substances imported as part of an article

Small Manufacturers (711.9; 704.3) are not subject to CDR

# Be Careful!

- With the exception of “naturally occurring substances”, if the chemical substance is on the EPA list of chemicals subject to a TSCA Special Action (rules, orders, civil actions, consent agreements), and the reporting threshold is met/exceeded:
  - **REPORTING IS REQUIRED!**
  - Even if the criteria for an exemption are met



# Identifying Reportable Chemical Substances





# Example 1 - Petrochemical Manufacturers

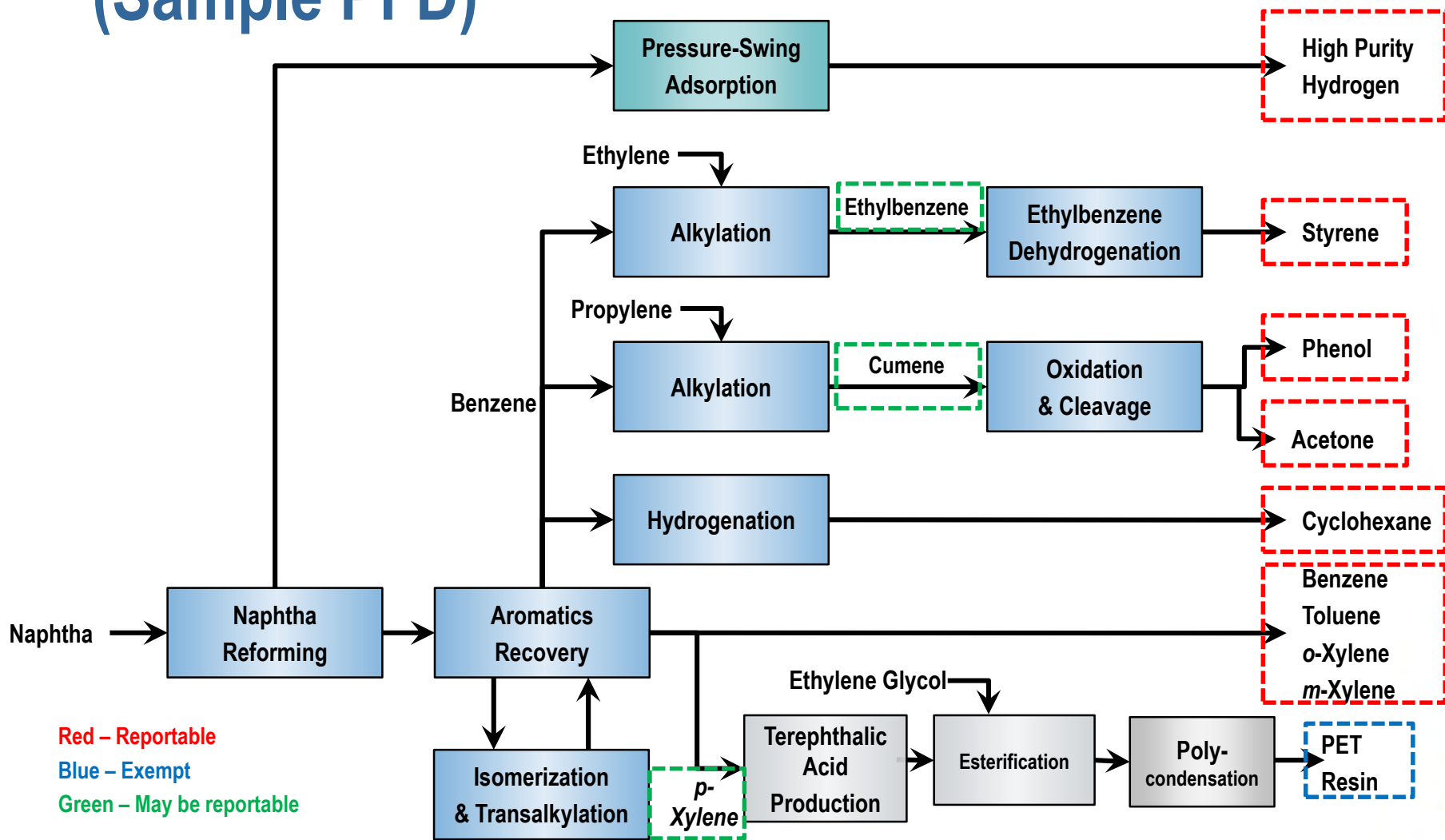


# What does a Petrochemical Manufacturer Report?

- Product Streams
- Any imported chemical substances
  - Importer is defined in 40 CFR 704.3
- Examine each intermediate stream and every byproduct stream to determine reportable chemical substances
  - *If declaring a substance as exempt or excluded from reporting, document that the exemption/exclusion criteria are met*
- Certain components of catalysts may be reportable



# General Flow Diagram for Aromatics Production (Sample PFD)



Any Imported Chemical Substances

Consider Intermediate Streams

Consider all byproduct streams (*not shown on this diagram*)

# Chemical Substance Identification

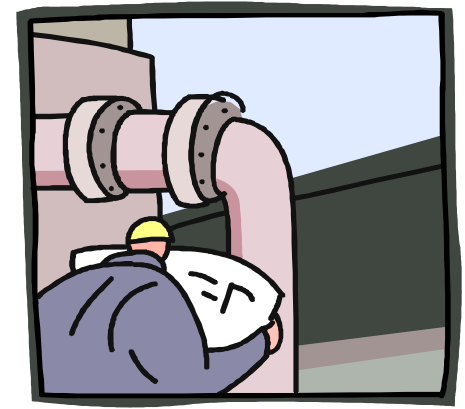
- Chemical substances must be reported using the correct Chemical Abstracts Service Registry Number (CASRN) and Chemical Abstracts Index Name
- Examples:
  - Styrene is reported as: “benzene, ethenyl”, CASRN 100-42-5
  - Acetone is reported as: “2-propanone”, CASRN 67-64-1
- The electronic reporting tool (e-CDRweb) connects directly to EPA’s Substance Registry Services ([www.epa.gov/srs](http://www.epa.gov/srs)) to aid in identifying and reporting the correct chemical substances



# Example 2 – Petroleum Refineries



# What does a Petroleum Refinery Report?



- Butane, propane, and other gas product streams (products that are gaseous at atmospheric conditions)
- Petroleum Process Streams (40 CFR 711.6)
  - Includes spent caustic and petroleum coke
- Benzene, toluene, and/or xylene product streams
- Inorganic compounds, such as sulfur (if sold) and (potentially) certain components of catalysts

# Refinery - Specific Challenges



- **Petroleum Process Streams (as listed on the TSCA Chemical Substance Inventory) are “UVCB” chemical substances**
  - **UVCB = Substances of Unknown or Variable composition, Complex reaction products and Biological materials**
- **UVCB Substances may include an Inventory definition to further describe the substance**

# Refinery - Specific Challenges

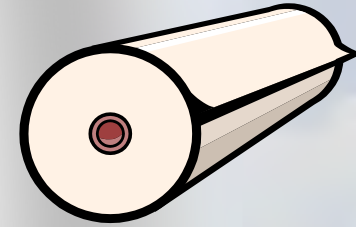
- Descriptions of the petroleum process streams can be found using EPA's Substance Registry Services at [www.epa.gov/srs](http://www.epa.gov/srs)
- Match petroleum process streams to the list in the regulations at 40 CFR 711.6 by:
  - Carbon number range
  - Other physical characteristics (boiling point range, viscosity)
  - The process unit that generates the stream



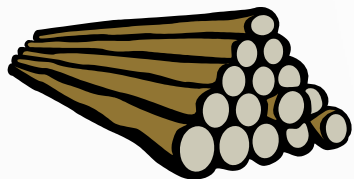
# Example 3 - Pulp Mills



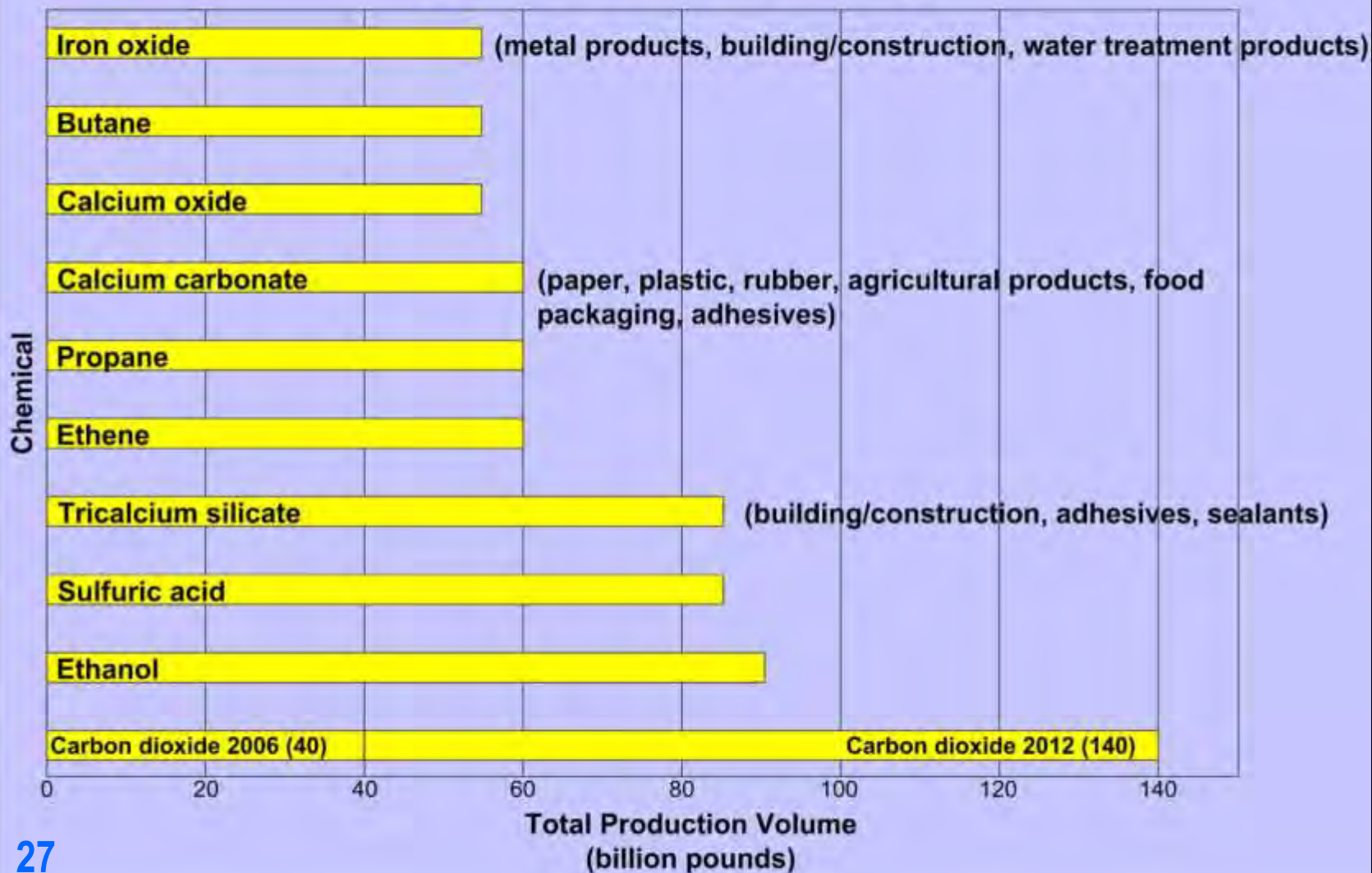
# What does a Pulp Mill Report?



- Organic byproducts (tall oil, turpentine, etc.)
- Substances generated during the pulping cycle and the causticizing cycle, such as:
  - Black liquor (or spent pulping liquors) (CASRN: 66071-92-9)
  - Green liquor (or smelt) (CASRN: 68131-30-6)
  - White liquor (CASRN: 68131-33-9)
  - Calcium carbonate (CASRN: 471-34-1)
  - Calcium oxide (CASRN: 1305-78-8)
- Ashes, such as fly ash (if sold)



## Top 10 Chemicals by Production Quantity - 2012 Reports (from the EPA Summary)





# 2016 Reporting





# Chemical Data Reporting

For most submitters, there are three sections to the report form (“Form U”):

- **Part I - Company and Site Identification Information**
- **Part II - Manufacturing Information**
- **Part III - Processing and Use Information**



# Chemical Data Reporting

## Part IV is for joint submissions only

- Required when a foreign supplier will not provide the specific chemical name of a component of an imported chemical mixture; or,
- When a chemical substance is manufactured using a confidential reactant and as a result, the manufacturer does not completely know the identity of all the components of a manufactured chemical substance



# 2012 versus 2016 Reporting

- **Maintains the following from 2012 cycle:**
  - **Electronic reporting is required using e-CDRweb to complete and CDX to submit**
  - **Reporting cycle returned to once every 4 years**
- **The secondary threshold for reporting processing and use information (Part III) has been removed (formerly 100,000 lbs for the last reporting cycle)**
- **Reporting of production data for four years (2012, 2013, 2014, and 2015)**
- **Reporting required if threshold exceeded during any year (not just during the primary year)**

# Part II of the Reporting Form:

- Chemical Information
  - CAS Registry Number or TSCA Accession Number
  - Chemical Name
  - Quantity Manufactured/Imported (**for 2012, 2013, 2014 and for 2015**)
- Other On-site Information (**2015 only**)
  - Number of Potentially Exposed Workers
  - Maximum Concentration
  - Physical Form(s) of the Substance
  - Quantity Exported
  - Quantity Used on Site
  - Whether the chemical is being recycled, remanufactured, reprocessed, reused, or “otherwise used” for a commercial purpose



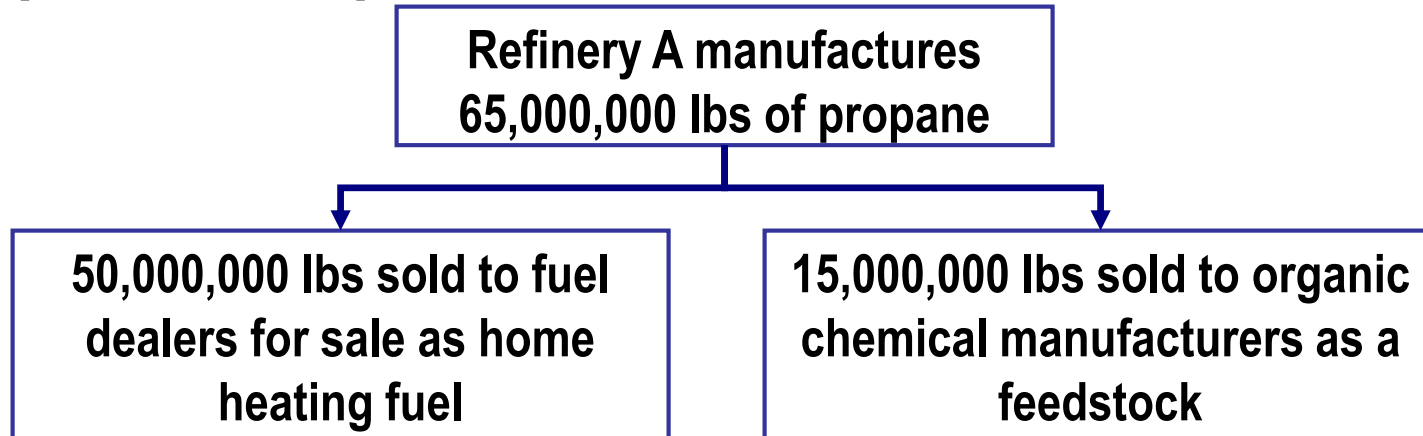
# Part III of the Reporting Form:



- Reported for 2015 domestic uses only:
  - Industrial Processing and Use
    - Within the manufacturing plant (on-site) and at other facilities to which the chemical was sold (off-site processing) and associated worker exposure
  - Consumer and Commercial Use
- Not required for the following “**partially exempt**” chemicals:
  - Petroleum process streams listed in 40 CFR 711.6(b)(1)
  - Specific chemical substances listed in 40 CFR 711.6(b)(2) (*substances of “low current interest” such as hydrogen*)

# Example – Part III, Section A (Industrial Processing and Use)

What unique combinations of codes should Refinery A report for Propane?



**PK:** Processing - repackaging  
**IS46:** Wholesale and Retail Trade  
**U012:** Fuels and Fuel Additives

**PC:** Processing as a reactant  
**IS21:** Other Basic Organic Chemical Manufacturing  
**U015:** Intermediates

Also report % of production associated with each use, number of industrial sites, and estimated number of potentially exposed workers.

# Part III – When is reporting complete?

- Reporting of “Processing or Use” information in Part III of the Reporting Form is complete when either:
  - The chemical is reacted or converted to form another chemical substance; or,
  - The final processing and use of the chemical substance is reported.
- In the propane example, information regarding the propane sold as home heating fuel would need to be reported in Part III, Section B (Consumer and Commercial Use).

# 2016 Reporting – Change of Ownership

- If a site changes ownership in 2012 (or later), the threshold determinations are based on the production/importation that occurred when each firm owned the site.
  - **The requirement to report prior year information does not transfer to the new owner when the site changes hands.**
  - Companies will be responsible for reporting data for the years during which the site was owned.



# Importance of Starting Now



# Starting the Reporting Process

- Review the 2012 Reports/Documentation
  - Which process streams/chemical substances were reported?
- Review an overall process flow diagram for the facility - identify products and byproducts; consider all intermediate streams
- Were any new process/production units brought on-line after 2011?

# Starting the Reporting Process

- **Tracking spreadsheets for production data should be created/implemented**
  - **Annual summaries for 2012, 2013, 2014, and 2015**
  - **Maintain spreadsheet on an ongoing basis for future TSCA reporting needs**
- **Identify any imported chemical substances**
  - **If a mixture is imported, a reporting evaluation must be performed for all chemical substances in the mixture**

# Reporting Thresholds

- Reporting threshold is **25,000 pounds per year for most chemical substances**
- If the chemical substance is on the EPA list of chemicals subject to certain TSCA Special Actions, the reporting threshold is **2,500 pounds per year**
  - Examples:
    - *mercury (CASRN 7439-97-6)*
    - *2-ethoxyethanol (CASRN 110-80-5)*



# Instructions/Guidance

- The EPA CDR Website ([www.epa.gov/cdr](http://www.epa.gov/cdr))
  - Reporting Instructions
  - Q&A Documents
  - Other Guidance
  - EPA Webinars
- TSCA Hotline: (202) 564-3012 or [tsca-hotline@epamail.epa.gov](mailto:tsca-hotline@epamail.epa.gov)
- NCASI Webinars and Technical Bulletins
- The regulations: 40 CFR 711

# Conclusions



# Conclusions

- **This is going to be challenging!**
- **Don't wait until 2016 - start now!**
  - **Identify reportable chemical substances (manufactured and imported)**
  - **Document exemptions/exclusions from reporting**
  - **Summarize 2015 processing and use information**
  - **Set up systems for tracking production and importation quantities for 2016 reporting and for future reporting cycles**

Questions

***Are there any questions?***

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# BACK-UP SLIDES

*(additional information - not part of the presentation)*



# Recordkeeping Requirements

- Per 40 CFR 711.1(d), “Each person who reports under this part must maintain records that document information reported under this part and, in accordance with TSCA, permit access to, and the copying of, such records by EPA officials.”
- Per 40 CFR 711.25, “Records relevant to reporting during a submission period must be retained for a period of 5 years beginning on the last day of the submission period.”

# Number of Potentially Exposed Workers

- You report an estimate of the total number of workers “reasonably likely to be exposed” (40 CFR 711.3) to a chemical substance.
  - Include exposures through any route of entry – inhalation, ingestion, skin contact.
  - Do not exclude workers wearing personal protective equipment.
- Reasonably likely to be exposed – Exposure to a chemical substance under foreseeable conditions of manufacture, processing, distribution in commerce, or use of the substance.

# Number of Potentially Exposed Workers

- Include workers who, as part of their daily activities, may potentially be exposed to the chemical substance.
- Include any temporary, seasonal, or contract workers if they may potentially be exposed.
- Report individual workers, not full-time equivalents.
- Report using the range codes listed in 40 CFR 711.15.





# Articles (40 CFR 704.3)

A manufactured item: (1) which is formed to a specific shape or design during manufacture, (2) which has end use function(s) dependent in whole or in part upon its shape or design during end use, and (3) which has either no change of chemical composition during its end use or only those changes of composition which have no commercial purpose separate from that of the article, and that result from a chemical reaction that occurs upon end use of other chemical substances, mixtures, or articles; except that fluids and particles are not considered articles regardless of shape or design.

# Naturally Occurring Substances [40 CFR 711.6(a)(3)]

A naturally occurring substance [as defined in 40 CFR 710.4(b)] is any chemical substance which is naturally occurring and:

(1) Which is:

- (i) unprocessed or,
- (ii) processed only by manual, mechanical, or gravitational means; by dissolution in water; by flotation; or by heating solely to remove water; or,

(2) Which is extracted from air by any means.

Examples of such substances are: raw agricultural commodities; water, air, natural gas, and crude oil; and rocks, ores, and minerals.

# Non-isolated Intermediate Exemption

“Non-isolated intermediate means any intermediate that is not intentionally removed from the equipment in which it is manufactured, including the reaction vessel in which it is manufactured, equipment which is ancillary to the reaction vessel, and any equipment through which the substance passes during a continuous flow process, but not including tanks or other vessels in which the substance is stored after its manufacture. Mechanical or gravity transfer through a closed system is not considered to be intentional removal, but storage or transfer to shipping containers “isolates” the substance by removing it from process equipment in which it is manufactured.”

(40 CFR 704.3)

- ❖ Any storage, even storage within the reaction vessel, negates the non-isolated status of the intermediate.

# Natural Gas

## [40 CFR 711.6(a)(4)]

Certain forms of natural gas are exempt from CDR:

<b>Form of Natural Gas</b>	<b>CAS Number</b>
Natural gas (petroleum), raw liquid mix	64741-48-6
Natural gas condensates	68919-39-1
Gasoline natural	8006-61-9
Gasoline (natural gas), natural	68425-31-0
Natural gas	8006-14-2
Natural gas, dried	68410-63-9



# Other Mixtures

In general, mixtures are not subject to CDR reporting.

However, the chemical substances comprising the mixture must be reported.

- If a mixture is imported, a reporting evaluation must be performed for all chemical substances in the mixture.
- If a mixture is manufactured on-site, report any components of the mixture that are actually generated on-site.
- If a mixture is produced on-site by combining existing substances that the company does not manufacture (has purchased from other domestic companies) and no chemical reaction occurs (i.e., only blending and formulating), do not report those substances.

# Byproducts and Impurities

Chemical substances may be generated as byproducts from chemical reactions.

- Byproducts that have commercial purpose must be reported.
- Do not report byproducts that are not manufactured for distribution in commerce and have no commercial purpose separate from the substance, mixture or article of which they are a part.
- Do not report byproducts disposed as waste or combusted as fuel.

Do not report impurities

- An impurity is a chemical substance which is unintentionally present with another chemical substance. (40 CFR 704.3)

# Reporting Standard

- All information on the CDR must be reported to the “known to or reasonably ascertainable by” standard
- This standard is defined in 40 CFR 704.3 as:
  - “All information in a person’s possession or control, plus all information that a reasonable person similarly situated might be expected to possess, control, or know.”